Evaluating a programme to develop social and emotional skills in primary school students

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Introducing SEAL

- SEAL – Social and Emotional Aspects of Learning
- Every Child Matters
  - Be Healthy
  - Stay Safe
  - **Enjoy and Achieve**
  - Make a positive contribution
  - Achieve economic wellbeing

- "Social, emotional and behavioural skills underlie almost every aspect of school, home and community life, including effective learning and getting on with other people. They are fundamental to school improvement."

DfES (2005: 7)

Introduction

- "A broad range of evidence is now available to support claims for the effectiveness of work to develop children's social, emotional and behavioural skills, in a number of areas:
  - greater educational and work success;
  - improvements in behaviour;
  - increased inclusion;
  - improved learning;
  - greater social cohesion.
  - …improved academic performance."

DfES (2005: 8)

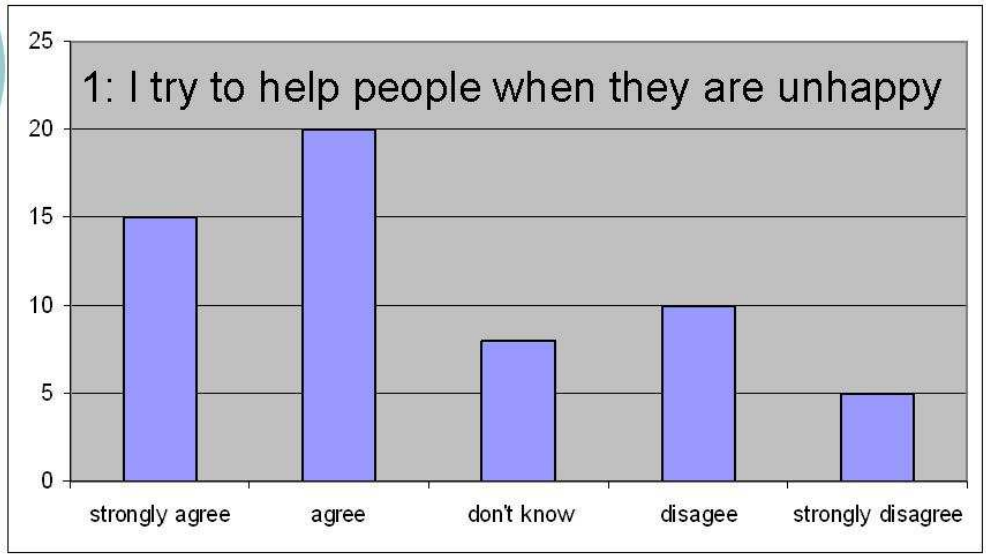
Using survey data to evaluate SEAL skill development

Tools to inform the implementation and development of SEAL and measure impact

SEAL student self-rating surveys

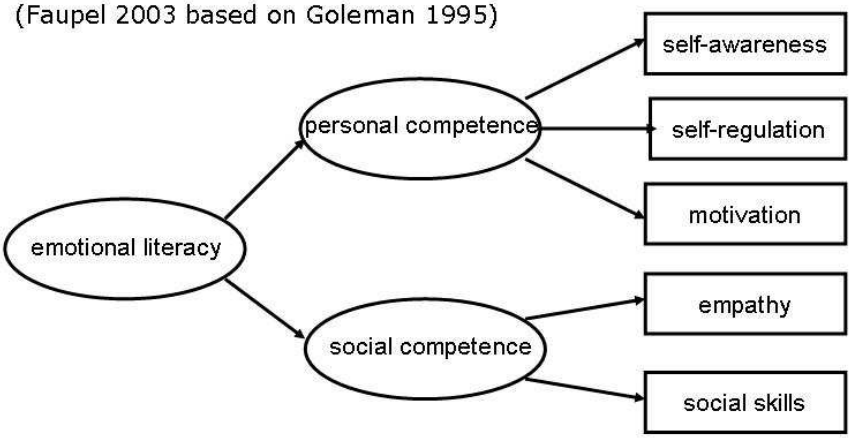
- Which survey to use? (Edmunds and Stewart-Brown 2003)
- "About Me and My School" – already in use as an baseline tool by some of the LA's schools
- DfES evaluation of Primary Behaviour and Attendance Pilot by the Institute of Education (Hallam *et al*, 2006)
- 40 different statements rated by students on a Likert scale from strongly agree to strongly disagree
- Typically schools had been analysing distribution of responses to individual statements.

SEAL student self-rating surveys



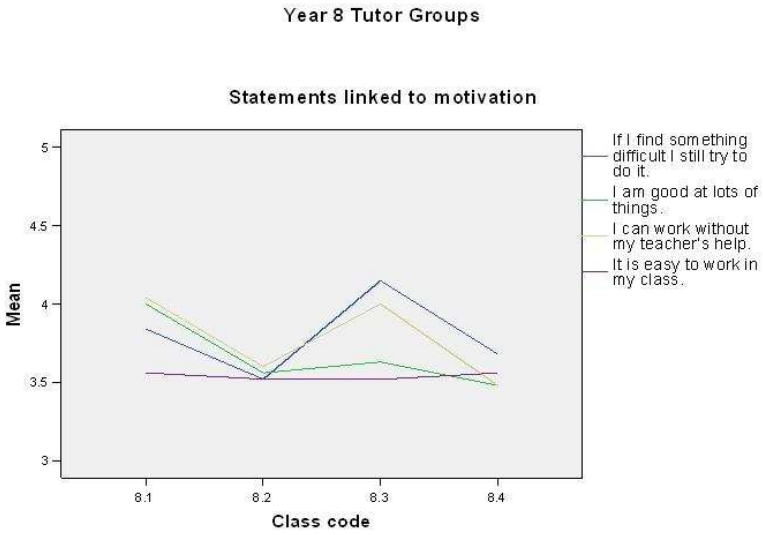
SEAL student self-rating surveys

- SEAL is based on a 5 dimensional model
  - (Faupel 2003 based on Goleman 1995)



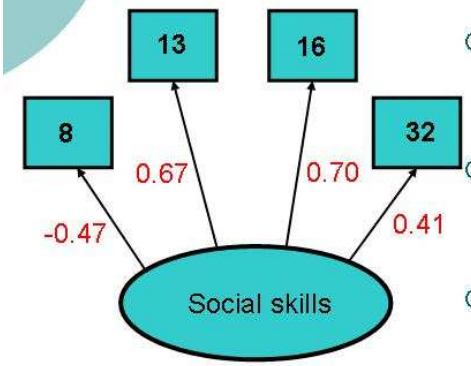
- These represent the five aspects of learning in SEAL

Basic analysis provided for schools



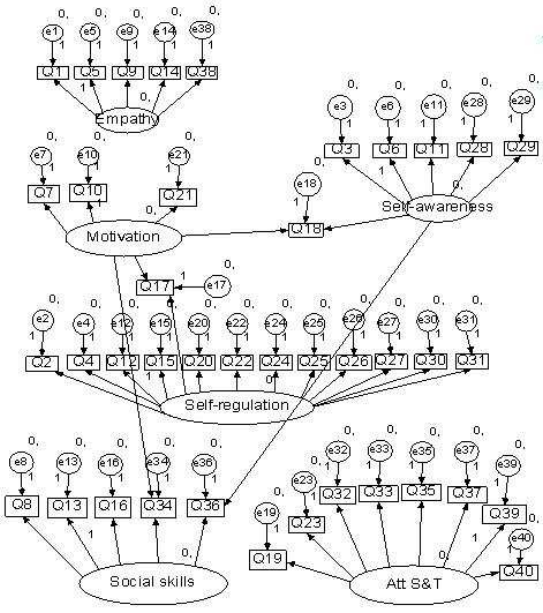
Survey items linked to the five aspects of SEAL

Generating SEAL aspect scores – Confirmatory Factor Analysis (CFA)



- The C in CFA – driven by theory not data
- Assign survey items to the 5 SEAL aspects
- Extra aspect added - "Attitudes to School and Teachers"
- Run the model with data to check model fit (Hu & Bentler 1999)
  - Single primary school n=228
- Adjust the model where justified
- Calculate the contribution each item makes to the aspect score

Generating aspect scores – Confirmatory Factor Analysis (CFA)



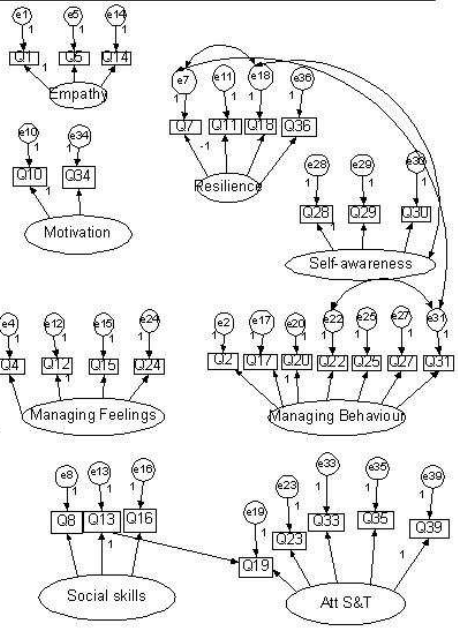
- Very poor model fit
- Still better fit than the original model employed in evaluation of B&A pilot (Hallam *et al*, 2006)

Generating aspect scores – Confirmatory Factor Analysis (CFA)

Fit measure	6 dimensional SEAL baseline model	Original survey model (equal loadings)
Chi-square	1422.3	1554.6.3
Degrees of freedom	721	682
Ch-sq/df	1.973	2.279
p	<0.001	<0.001
CFI	0.690	0.602
GFI	0.763	0.708
TLI	0.665	0.590
NFI	0.533	0.463
RMSEA	0.065	0.075
pCLOSE	<0.001	<0.001
RMSR	0.116	0.142
Information criteria (in order of increasing penalty for complexity)		
AIC	1620.3	1672.6
BCC	1663.9	1697.9
CAIC	2058.8	1933.9
BIC	1959.8	1874.9

Generating aspect scores – Confirmatory Factor Analysis (CFA)

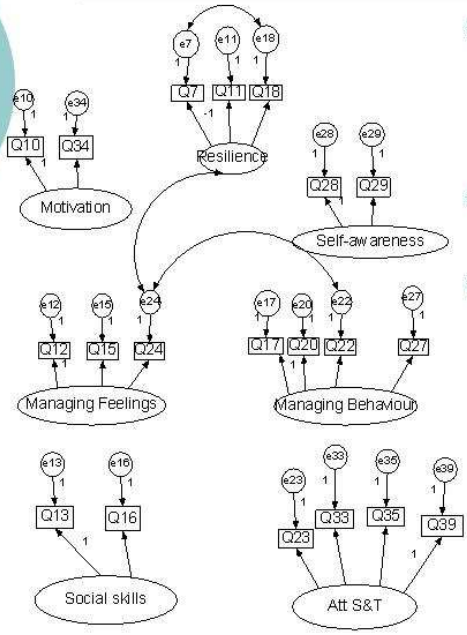
- Low factor weight items deleted from model <0.3
- Data is badly behaved
  - Skew and kurtosis cause problems (Brown 2006)
  - Most problematic items also deleted
- Items loading on managing feelings dimension divided
  - Managing feelings of anger and frustration
  - Managing behaviour
- Extra dimension of resilience added



Generating aspect scores – Confirmatory Factor Analysis (CFA)

Fit measure	Mod 3 model 8 dimensions	Mod 4 model covariances	Mod 4 minus resilience	Mod 4 minus empathy	Mod 4 minus both resilience and empathy
Chi-square	712.8	616.6	455.2	518.7	378.7
Degrees of freedom	406	400	300	323	234
Chi-sq/df	1.756	1.541	1.517	1.606	1.618
p	<0.001	<0.001	<0.001	<0.001	<0.001
CFI	0.827	0.878	0.898	0.882	0.898
GFI	0.838	0.859	0.875	0.868	0.884
TLI	0.801	0.858	0.880	0.862	0.879
NFI	0.681	0.724	0.756	0.745	0.776
RMSEA	0.058	0.049*	0.048*	0.052	0.052
pCLOSE	0.037	0.592*	0.656*	0.362*	0.345*
RMSR	0.101	0.093	0.083	0.096	0.085
Information criteria (in order of increasing penalty for complexity)					
AIC	892.8	808.6	611.2	684.7	510.7
BCC	922.3	840.1	633.1	709.0	527.0
CAIC	1291.4	1233.8	956.7	1052.3	803.0
BIC	1201.4	1137.8	878.7	969.3	737.0

Generating aspect scores – Confirmatory Factor Analysis (CFA)



- Larger data set n=1904 allowed examination of standardised residuals to identify points of strain
- Further deletion of problematical items
- Scale reliability coefficients (Raykov 2001, 2004)
  - Self- awareness $\rho = 0.744$
  - Resilience $\rho = 0.762$
  - Motivation $\rho = 0.788$
  - Managing Feelings $\rho = 0.689$
  - Managing Behaviour $\rho = 0.795$
  - Social skills $\rho = 0.839$
  - Attitudes to School and Teachers $\rho = 0.824$

Generating aspect scores – Confirmatory Factor Analysis (CFA)

Fit measure	Mod 4 model with covariances n=228	Mod 4 model with covariances n=1904	Mod 5 model n=1904	Mod 5 model without Q24 covars n=1904
Chi-square	616.6	2453.7	486.3	617.3
Degrees of freedom	400	400	146	148
Chi-sq/df	1.541	6.134	3.331	4.171
p	<0.001	<0.001	<0.001	<0.001
CFI	0.878	0.862	0.962*	0.947
GFI	0.859	0.912	0.975*	0.968*
TLI	0.858	0.840	0.950*	0.932
NFI	0.724	0.840	0.946	0.932
RMSEA	0.049*	0.052	0.035*	0.041*
Pclose	0.592*	0.052*	1.000*	1.000*
RMSR	0.093	0.066*	0.036*	0.043*
Information criteria (in order of increasing penalty for complexity)				
AIC	808.6	2645.7	614.3	741.3
BCC	840.1	2649.0	615.7	742.7
CAIC	1233.8	3274.7	1033.6	1147.5
BIC	1137.8	3178.7	969.6	1085.5

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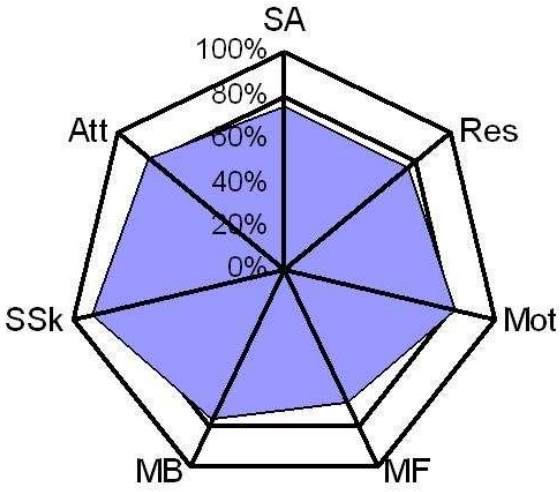
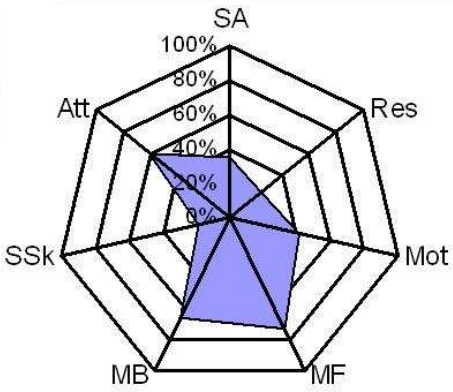
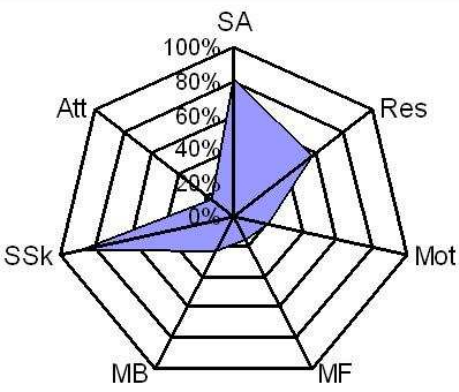
Plotting the results

- Resulting scores adjusted to percentages
- Results can be represented as a 'radar plot'
- A visual map to aid SEAL skills development …?
- Some cautionary notes (students, scales and key stages)



Interpreting the results



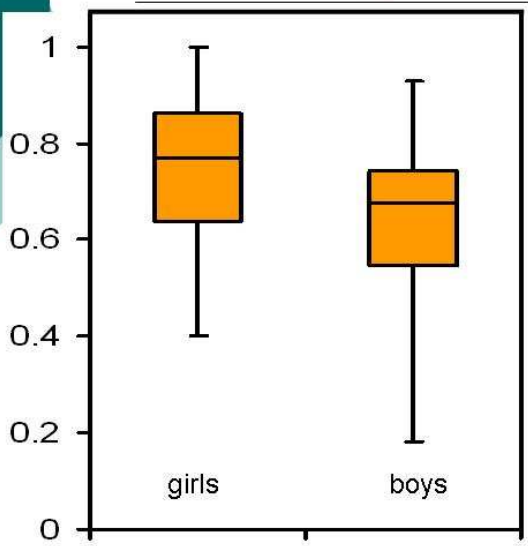


What kind of learner might these plots represent?

How might they get on in group work or individual work?

How would you use SEAL to develop their skills?

Producing scores for groups



Managing Feelings scores

It's possible to produce average scores for pupil groups and display these as plots.

They tend to smooth out the fine detail.

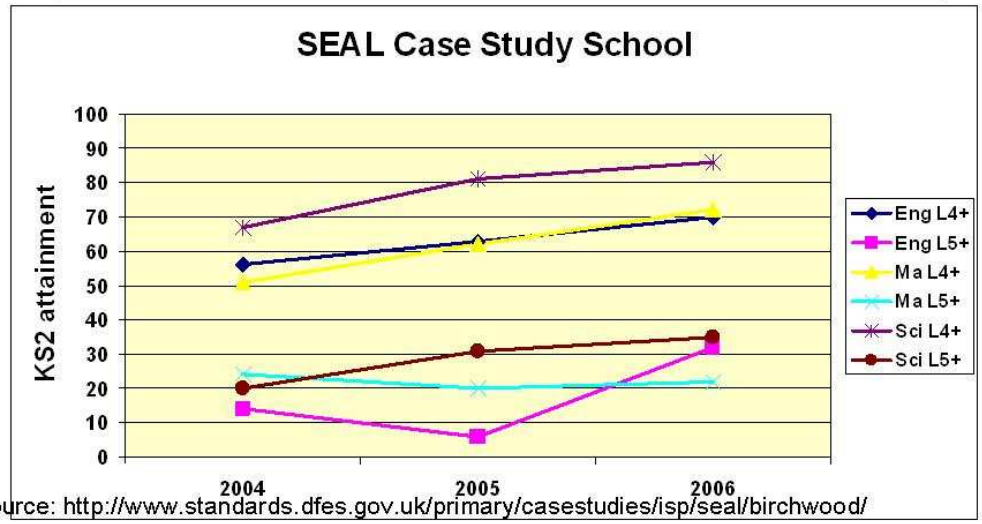
We can use other ways to present group data that retain more info - box and whisker plots.

Every Child Matters and standards

- "there can be no school standards without Every Child Matters – and no Every Child Matters without school standards"

Jeffrey & Tabberer, October 2006
Directors General of the DCSF

DCSF SEAL case study



Source: http://www.standards.dfes.gov.uk/primary/casestudies/isp/seal/birchwood/

KS1-2 VA	97.7	98.4	98.5	(2003: 98.7)

Higher than average proportion of SEN for LA, which in turn is higher than national.

Evaluating the impact of SEAL

- A whole wealth of initiatives running in primary schools – DCSF website case study
- What is the unique contribution made by implementing an initiative as broad as SEAL?
- The 'smoothing' effect of school-level data
- The reality of riding the school improvement roller-coaster (Thomas 2007)
- Limitations of what numbers can tell us about an initiative like SEAL

DCSF SEAL case study

Improved attendance - 92.7%(04), 94.5%(05) [94.0%(06)]

Fixed term exclusions down 50% with no permanent in 05

Monitoring shows that children are much more able to sustain independent learning

Improvements self-esteem, resilience, understanding of others' points of view and self-control

Whole-school language established for children and adults to talk about emotions and behaviour

Reduction in the number of serious whole-school incidents recorded.

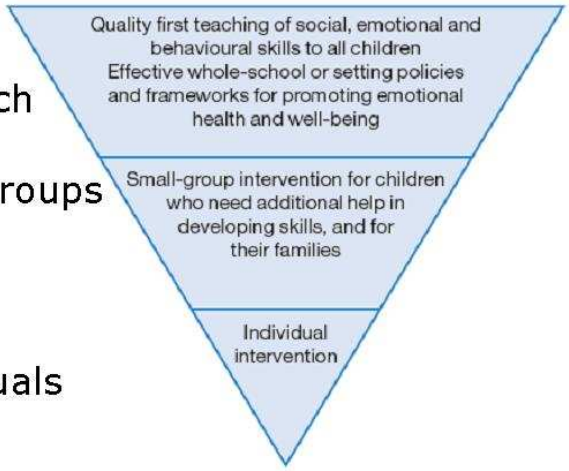
Source: http://www.standards.dfes.gov.uk/primary/casestudies/isp/seal/birchwood/

National Strategy programmes – The 3-wave model

Wave 1 – for all
whole school approach

Wave 2 – for small groups
nurture groups
Family SEAL

Wave 3 – for individuals

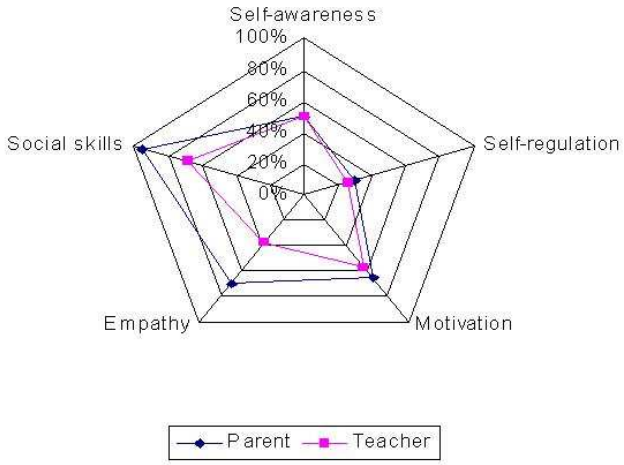


Source: DfES (2005: 13)

Family SEAL pilot Parent and Teacher surveys

- Students causing social and emotional concern identified in each class
- Random selection of 3 concern and 3 non-concern students from each class for monitoring
- School used surveys developed by Southampton Psychology Service (Faupel 2003)
  - Pre date SEAL but also based on Goleman's five dimensional model
- Significant differences between parent and teacher measures of the student's SEAL skills
  - ANOVA analysis
  - despite small samples (14 matched 'concerns' and 13 'controls')
- Plan to use surveys during a pilot of Family SEAL in 5 schools across the LA

Family SEAL pilot
Parent and Teacher surveys



- 'Concern' students sig diff for empathy** and social skills* (parent higher)
- 'Control' students sig differences for self-awareness** and motivation* (teacher higher)

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